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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,293	08/01/2003	Sumio Kuroda	1100.68251	5077

7590 05/17/2006

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EXAMINER

MERCEDES, DISMERY E

ART UNIT PAPER NUMBER

2627

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/632,293

Applicant(s)

KURODA ET AL.

Examiner

Dismery E. Mercedes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 14-16 and 19 is/are rejected.
- 7) ☐ Claim(s) 12-13, 17-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. This office action is in response to RCE filed 5/05/2006.

#### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1-4, 9, 10,15 rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al. (US 6,529,341 B1) in view of Tsuyoshi et al. (4,748,611).

Ishida et al. discloses a preformat method (col.8, lines 40-44) for a magnetic recording medium (col.3, line 55), for recording preformat information including servo information on a magnetic recording medium by a magnetic recording apparatus including a recording head (col.3, line 58), comprising steps of recording at least the servo information of the preformat information on the magnetic recording medium by magnetic transfer (col.3, line 63-col.4, line 6).

Ishida et al. does not explicitly teach recording preformat information excluding the servo information on the magnetic recording medium by the recording head.

However, Tsuyoshi et al. is relied for disclosing such (as depicted in Figs5a-5f preformat information excludes servo information, as previously mentioned, Ishida discloses a recording head to record preformat information). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to implement Tanaka's technique to modify Ishida's method the motivation being to provide the method disclosed by Ishida with the capability of recording ID

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information and synchronization signal without reducing the data recording area (as Tsuyoshi teaches in col.3, lines 55-60). In addition Ishida et al. discloses that recording preformat information with a recording head using a servo writer is very well known in the art for positioning control.

As to Claim 9, it is drawn to the apparatus of Claim 1 and is therefore rejected for the similar reasons set forth in the rejection of Claim 1, respectively.

As to Claims 10 & 15, in the obvious combination of Ishida et al. further shows the magnetic recording medium has a transfer clock pattern, which is synchronized with the servo information pattern, recorded thereon in advance by magnetic transfer (col. 4, lines 43-54 & col.9, lines 36-37 and as depicted in FIG.1), and Tsusyoshi et al. further discloses a phase synchronizing unit for synchronizing a phase of a clock of the recording head for recording information with a phase of a transfer clock obtained by reproducing the transfer clock pattern by the reproducing head (col.6, line 60- col7, line 55 of Tsuyoshi et al.).

As to Claim 2, Ishida et al. further discloses a preformat method (col.8, lines 40-44) for a magnetic recording medium (col.3, line 55), for recording preformat information including servo information on a magnetic recording medium by a magnetic recording and reproducing apparatus (col.4, line 10) including a recording head (col.3, line 58) and reproducing head (col.3, line 60), comprising steps of recording at least the servo information of the preformat information on the magnetic recording medium by magnetic transfer (col.3, line 63-col.4, line 6); reproducing preformat information recorded by magnetic transfer (co.13, line 38-39); fining a pattern of the reproduced preformat information (col.8, lines 4-5).

As to Claims 3 Ishida et al. further discloses a preformat method (col.8, lines 40-44) for a magnetic recording medium (col.3, line 55), for recording preformat information including servo information on a magnetic recording medium by a magnetic recording and reproducing apparatus

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(col.4, line 10) including a recording head (col.3, line 58) and reproducing head (col.3, line 60), comprising steps of recording at least the servo information of the preformat information on the magnetic recording medium by magnetic transfer (col.3, line 63-col.4, line 6); recording a transfer clock pattern, which is synchronized with a pattern of the servo information, on the magnetic recording medium (as depicted in FIG.1, col. 4, lines 43-54 & col.9, lines 36-37). Ishida et al. fails to explicitly teach recording preformat information excluding the servo information on the magnetic recording medium by the recording head.

However, Tsuyoshi et al. is relied for disclosing such (as depicted in Figs5a-5f preformat information excludes servo information, as previously mentioned, Ishida discloses a recording head to record preformat information). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to implement Tanaka's technique to modify Ishida's method the motivation being because it would provide the method disclosed by Ishida with the capability of recording ID information and synchronization signal without reducing the data recording area (as Tsuyoshi teaches in col.3, lines 55-60).

As to Claim 4, Ishida et al. discloses a preformat method (col.8, lines 40-44) for a magnetic recording medium (col.3, line 55), for recording preformat information including servo information on a magnetic recording medium by a magnetic recording and reproducing apparatus (col.4, line 10) including a recording head (col.3, line 58) and reproducing head (col.3, line 60), comprising steps of recording at least the servo information of the preformat information on the magnetic recording medium by magnetic transfer (col.3, line 63-col.4, line 6); reproducing preformat information recorded by magnetic transfer (col.13, line 38-39); finding a pattern of the reproduced preformat information (col.8, lines 4-5).

Ishida et al. does not explicitly teach and recording the fine preformat information on the magnetic recording medium by the recording head.

However, Tsuyoshi et al. is relied for disclosing such (as depicted in Figs 5a-5f preformat information excludes servo information, as previously mentioned, Ishida discloses a recording head to record preformat information). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to implement Tanaka's technique to modify Ishida's method the motivation being because it would provide the method disclosed by Ishida with the capability of recording ID information and synchronization signal without reducing the data recording area (as Tsuyoshi teaches in col.3, lines 55-60).

2. Claim 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al. (US 6,529,341 B1) in view of Tanaka et al. (US 5,680,267).

As to Claim 5, Ishida et al. discloses a magnetic recording medium comprising: a servo information pattern of preformat information patterns, which is recorded by magnetic transfer (col.3, line 63-col.4, line 6); and a transfer clock pattern synchronized with the servo information pattern (col. 4, lines 43-54 & col.9, lines 36-37 and as depicted in FIG.1). Ishida fails to specifically disclose preformat information patterns excluding the servo information pattern recorded as fine patterns after said servo information pattern is recorded. However, Tanaka et al. is relied on for disclosing such (see figs.1, 3D and col.3, lines 13-16 & col.4, line 66-col.5, line 6). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the medium as disclosed by Ishida et al. by introducing preformat information as a fine pattern after servo information pattern has been recorded the motivation being to obtain information on a position within a track (as disclosed in col.4, lines 66-67 of Tanaka et al.).

As to Claim 6, Ishida et al. further discloses the magnetic recording medium, which has a circular form in a plan view, wherein the transfer clock pattern is recorded on an inner or outer periphery portion of the magnetic recording medium (col.10, lines 5-10).

As to Claims 7 & 8, Ishida et al. further discloses information is recorded by a perpendicular magnetic recording method (col.16, lines 30-35).

3. Claims 11, 14, 16 & 19 are rejected as being unpatentable over Ishida et al. in view of Tsuyoshi et al. further in view of Yamakoshi (US 6,381,292).

The teachings of Ishida et al. in view of Tsuyoshi et al are incorporated herein. The combination of Ishida and Tsuyoshi et al discloses the magnetic recording and reproducing apparatus according to Claims 9,10,15, but failed to explicitly disclose a frequency-multiplying unit for multiplying a frequency for recording information in a clock finer than the transfer clock. However, Yamakoshi discloses a phase synchronizing apparatus, which includes a frequency multiplying unit (as depicted in FIG.4 & col.6, lines44-66). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a phase synchronizing circuit including frequency multiplier as taught by Yomakoshi, in the system of Ishida and Tsuyoshi et al, because it would provide the system of Ishida and Tsuyoshi et al with the enhanced capability of adjusting the signal to a desired predetermined amplitude (col.6, lines 44-45 of Yomakoshi).

#### ***Allowable Subject Matter***

Claims 12-13, 17-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 12 & 17 are allowable over the prior art since the cited references failed

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to disclose: wherein the magnetic recording medium has a transfer clock pattern, which is synchronized with the servo information pattern, recorded thereon in advance by magnetic transfer, further comprising a phase difference detecting unit for detecting a phase difference between a transfer clock which is obtained by reproducing the transfer clock pattern by the reproducing head and a write-once clock which is recorded by the recording head.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Uchida et al. (US 6,084,731); Tanaka et al. (US 5,680,267); Hoshimo et al. (US 5,539,723); Moran et al. (US 6,738,205); Umeda et al. (US 6,466,385).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dismery E. Mercedes whose telephone number is 571-272-7558. The examiner can normally be reached on Monday - Friday, from 9:00am - 4:00pm.

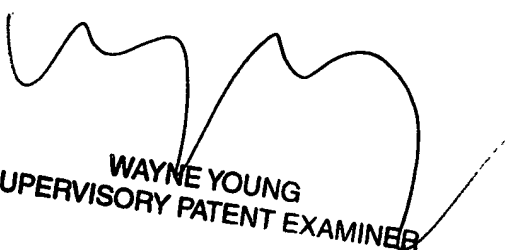
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne R. Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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WAYNE YOUNG  
SUPERVISORY PATENT EXAMINER